

Evaluation of resistance to lodging of buckwheat varieties on the basis of anatomical features

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Abstract

Lodging crops is one of the reasons for shortage of crops and reducing its quality. For common buckwheat, the tendency to lodging is one of the factors limiting the production of this valuable crop. At the moment, the main area under buckwheat in Russia is taken by the varieties created on the basis of new morphobiotypes: restrictedly branching, determinant, with the physiological determination of growth. The present study aims at evaluating the resistance to lodging varieties, from different modern selections of buckwheat in Russia. We used the method of anatomical studies. It was found that the capacity of growth of woody tissues (sclerenchyma and wood) in the stem of buckwheat can serve as an indicator of resistance to lodging. Quality varietal differences in the anatomical features have not been found. The varieties significantly differed in area of lignified tissues in cross sections of the stem; this feature manifests itself in different varieties, regardless of their affiliation to a particular morphobiotype. It was concluded that in the process of selection of significant increase in thickening lignified tissues of buckwheat varieties did not happen. In addition, the positive correlation of mean strength between the area of woody tissues and the stem thickness and root maintenance of plants.

Keywords

Anatomical structure of the stem, Common buckwheat, lodging, Varieties